

Claims

1. A high-pressure pump, in particular for a fuel injection system of an internal combustion engine, having a housing (10, 14, 22; 122) with at least one pump element (18) that has a pump piston (20) driven into a stroke motion by a drive shaft (12); the pump piston (20) is guided so that it can slide in a cylinder bore (28) of a housing part (22; 122) and delimits a pumping chamber (30) therein; a support element (40; 140) supports the pump piston (20) against the drive shaft (12); and a prestressed return spring (60; 160) acts on both the pump piston (20) and the support element (40; 140) in the direction toward the drive shaft (12), characterized in that the support element (40; 140) is guided so that it can slide in a receptacle (46; 146), which is contained in the housing part (22; 122) that also contains the cylinder bore (28), in the direction of the longitudinal axis (21) of the pump piston (20), but cannot rotate around the longitudinal axis (21).
2. The high-pressure pump according to claim 1, characterized in that the receptacle (46; 146) contained in the housing part (22; 122) adjoins the cylinder bore (28) at the end oriented toward the drive shaft (12).
3. The high-pressure pump according to claim 1 or 2, characterized in that the receptacle (46; 146) is embodied in the form of at least one slot provided in the housing part (22; 122).

4. The high-pressure pump according to one of claims 1 through 3, characterized in that the support element (40; 140) is embodied as at least approximately rectangular in cross section.
5. The high-pressure pump according to one of the preceding claims, characterized in that the housing part (22; 122) has an extension (26; 126, 172) that is at least approximately cylindrical, is oriented toward the drive shaft (12), and contains the cylinder bore (28) and the receptacle (46; 146).
6. The high-pressure pump according to claim 5, characterized in that the return spring (60) is embodied in the form of a helical compression spring and encompasses the extension (26) of the housing part (22).
7. The high-pressure pump according to claim 5, characterized in that the extension (126, 172) of the housing part (122) has an annular groove (170) that opens toward the drive shaft (12) and divides the extension into an inner extension (172) and an outer extension (126) encompassing it; and the return spring (160), which is embodied in the form of a helical compression spring, is contained in the annular groove (170).
8. The high-pressure pump according to one of the preceding claims, characterized in that the return spring (60; 160) is supported at least indirectly against the support element (40; 140); and the pump piston (20) is coupled to the support element (40; 140) in the direction of its longitudinal axis (21).